EPJ Web of Conferences **5**, 04005 (2010)
DOI:10.1051/epjconf/20100504005

Decomposition and interpretation of Mueller matrices

R. Ossikovski

LPICM, Ecole Polytechnique, CNRS, 91128, Palaiseau, France

Abstract. The various decompositions of depolarizing Mueller matrices into products of basic optical devices, i.e. retarders, diattenuators and depolarizers, are critically revisited. Both "classic" as well as recently proposed factorizations are overviewed. The "depolarization aspect" is given a special attention. Experimental matrices are factorized and physically interpreted using the different decompositions. The problems of physical realizability and matrix filtering are treated in connection with the sum decomposition of a depolarizing Mueller matrix.